

WHAT IS CLAIMED IS:

1. A composition comprising: a chimeric polypeptide comprising a peptide or polypeptide targeting moiety specific for endothelial cells linked to an antiangiogenic polypeptide.
2. The composition of claim 1 wherein the targeting moiety binds to integrin on endothelial cells.
3. The composition of claim 2 wherein the targeting moiety comprises RGD, NGR, RGDNGR, or NGRRGD.
4. The composition of claim 2 wherein the targeting moiety binds to $\alpha_v\beta_3/\alpha_v\beta_5$ integrins.
5. The composition of claim 1 wherein the targeting moiety and the anti-angiogenic polypeptide are linked via a peptide bond.
6. The composition of claim 1 wherein the targeting moiety is linked to the amino terminus of the anti-angiogenic polypeptide.
7. The composition of claim 1 wherein the targeting moiety is linked to the carboxy terminus of the antiangiogenic polypeptide.
8. The composition of claim 1 wherein the antiangiogenic polypeptide is endostatin.
9. The composition of claim 8 wherein the amino acid at position 125 in endostatin is not proline.

10. The composition of claim 9 wherein the amino acid at position 125 is alanine, valine, leucine, isoleucine or methionine.
- 5 11. The composition of claim 1 wherein the antiangiogenic polypeptide is angiostatin.
12. The composition of claim 1 wherein the antiangiostatic polypeptide is kringle 5 of plasminogen, angiostatin (kringle 1-4 of plasminogen), tumstatin, canstatin, anti-thrombin fragment or retinal pigment
10 derived factor.
13. The composition of claim 1 further comprising a pharmaceutically acceptable diluent.
- 15 14. The composition of claim 8 wherein the targeting moiety is RGD.
15. A sustained release dosage form comprising the composition of claim 1.
- 20 16. The sustained release dosage form of claim 15 which comprises alginate beads.
17. A host cell transformed with recombinant DNA encoding a chimeric polypeptide comprising a peptide or polypeptide targeting moiety
25 specific for endothelial cells linked to an antiangiogenic polypeptide.
18. A method to inhibit or prevent undesirable endothelial cell proliferation or migration, comprising: contacting a mammalian endothelial cell with an amount of the composition of claim 1
30 effective to inhibit or prevent undesirable endothelial cell proliferation or migration.

19. The method of claim 18 wherein the mammalian cell is a human cell.
- 5 20. The method of claim 18 wherein the composition comprises a RGD-containing peptide linked to endostatin.
- 10 21. A therapeutic method comprising: administering to a mammal having a condition characterized by undesirable endothelial cell proliferation or migration, a dosage from comprising an effective amount of the composition of claim 1.
22. The method of claim 21 wherein the condition is cancer, diabetic retinopathy, macular degeneration, or restenosis.
- 15 23. The method of claim 21 wherein the condition is colon cancer.
24. The method of claim 21 wherein the condition is ovarian cancer.
- 20 25. The method of claim 21 wherein the dosage form is a sustained release dosage form.
26. The method of claim 25 wherein the sustained release dosage form comprises alginate.
- 25 27. The method of claim 18 or 21 wherein the antiangiogenic polypeptide in the composition is kringle 5 of plasminogen, angiostatin (kringle 1-4 of plasminogen), tumstatin, canstatin, anti-thrombin fragment or retinal pigment derived factor.
- 30 28. The method of claim 18 or 21 wherein the antiangiostatic polypeptide in the composition is endostatin.

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- 29. The method of claim 28 wherein amino acid at position 125 of endostatin is not a proline.
- 5 30. The method of claim 29 wherein the amino acid at position 125 is alanine, valine, leucine, isoleucine or methionine.
- 31. The method of claim 18 or 21 wherein the targeting moiety is RGD, NGR, RGDNGR, or NGRRGD.

10